



UNITED STATES PATENT AND TRADEMARK OFFICE

[Handwritten mark]

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,099	09/09/2003	Ian W. Rickets	C330.102.101	9966

25281 7590 09/12/2006

DICKE, BILLIG & CZAJA, P.L.L.C.
FIFTH STREET TOWERS
100 SOUTH FIFTH STREET, SUITE 2250
MINNEAPOLIS, MN 55402

EXAMINER

JAWORSKI, FRANCIS J

ART UNIT PAPER NUMBER

3768

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,099

Applicant(s)

RICKETS ET AL.

Examiner

Jaworski Francis J.

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Jan 16, 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, since “ the probe “ lacks antecedenc, having been first introduced at the level of claim 4.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin (US5919139) insofar as Lin teaches a method which includes:

Vibrating a tissue area of interest with a vibratory probe device 400 depicted in Figure 4 which includes an acoustic speaker 402 and a tissue contacting pad of disc shape termed the acoustic membrane 414, and capturing a power Doppler image of at least part of the vibrating tissue.

{ Note that the basis for the latter feature recitation is the inclusion in the specification of a suggestion to use Doppler power for the image in col. 8 lines 41 – 44 which would inherently represent in respective Figs. 6 and 8 for element 612 or method step box 825 for ‘amplitude’ read “ amplitude or power “.]

Lin further teaches concurrently using the B-mode image to compensate for (i.e. to nullify or reduce) the echogenicity due to tissue contrast alone, see Fig. 7 and the attendant passage bridging cols. 7 – 8 of the patent.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Parker et al (US5099848) or Sehgal (US5997477).

If Lin be interpreted as for some reasoning falling short of a literal showing of a power Doppler display, then it would nonetheless have been obvious in view of Parker et al to use Doppler power to provide an elastographic image since Parker et al similarly uses an acoustic speaker driver and a B-scan/color Doppler imager (see col. 8 bottom) to display results and in order to identify abnormalities e.g. as associated with a tumor, and in the course of processing derives the elasticity related Beta parameter from integrated Doppler power, see equations 1, 2 and 6 in col. 10 such that the image displayed is a power-related or power-derived image.

In the alternative, it would have been obvious in view of Sehgal to use Doppler power as the elastographic return signal modality since Sehgal like Lin is concerned with tumor detection and similarly uses an acoustic driver to provoke tissue motion, and Sehgal states col. 5 bottom that when the suspect nodule is subjected to sensitive

Art Unit: 3768

resonance vibration the use of Doppler power allows sensitivity to slow motions of the vibrated tissue and makes the measurement more independent of transducer ultrasound beam tissue intercept angle. [Note that Sehgal may not necessarily produce a two-dimensional spatial image but does produce at least a resonance trace representative of power for a focused tissue region on PC display 26.]

Otherwise Lin is relied upon for the dependent claims details as discussed above.

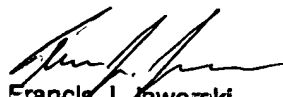
Patentability Assessment

The Lin patent appears to be anticipatory of all claimed features.

Since the secondary teachings of the Parker et al and Sehgal patents also relate to power Doppler displays for tumor elasticity assessments (and on a but slightly less relevant level since the power in the case of Parker et al appears to be a parameter with relationship to the displayed Beta and no B-mode compensation is practiced; in the case of Sehgal no two-dimensional display is specifically invoked nor is B-mode or B-mode compensation practiced) the Examiner is combining them in supplement to the Lin teaching under the supposition for argument's sake that a literal enactment of a power image is not shown in the former, since this additionally allows these teachings to be considered compositely as they would by the artisans regarding power Doppler as an elastographic imaging modality. Patentability is therefore not evident at this juncture.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj 082606


Francis J. Jaworski
Primary Examiner